DEMA/JPD **ADDENDUM # 1** **7 October 2004**

DATED 15 September 2004
RFQ No. Q5-0001
Removing all Existing and Re-Installing New Roof Building # L3161
Coolidge Armory, 1150 North 4th Street
Coolidge, Arizona 85228

DEPARTMENT OF EMERGENCY AND MILITARY AFFAIRS
DIVISION OF MILITARY AFFAIRS
5636 E. McDowell Road, #M5350
Phoenix, Arizona 85008-3495

The following changes, additions, and/or deletions are for the above Request For Quotation, all other terms and conditions shall remain the same. This addendum forms a part of the Contract Documents and modifies them as follows:

1. The following roof products have been reviewed and approved for use on this project.

Page No.	Spec. No.	Submittal No.	Specification Heading
12	1.	1	SBS Modified Asphalt Coated Fiberglass Base Sheet: **Thermo Manufacturing "Thermoflex 7002" SBS Glass Fiber Base Sheet.**
12	3.	2	Bitumen: **Owens Corning "Trumball 'Standard Type IV' asphalt" disturbuted by Roofing Supply of Arizona.Phone No; (602) 931-0054**
12	4.		¾ -inch Thick Polyisocyanurate / Perlite Composite Rigid Roof Insulation:
	a.		31/2-inch, 48-inch by 48-inch size, composite roof insulation board combining polisocyanurate foam with perlite riegid insulation and fiber glass facer in compliance with ASTM C1289, Type III, UL 790 Class A.
	b.		31/2-inch thick polyisocanurate / perlite composite rigid roof insulation shall provide a thermal resistance "R" factor of 19.90.
		3	**Atlas Roofing Corporation "ACFoam Composite / PB (Perlite)" distributed by Roofing Supply of Arizona.**
14	4.	4	Polycster Felt: **Thermo Manufacturingt "Hot Alloy 185"**
14	5.	5	SEBS Modified Clay Stabilized Asphalt Emulsion: **Thermo Manufacturing "#404 SEBS EMULISION" SEBS Modified Asphalt Emulsion.**

15	6.	6	Elastomeric Acrylic Roof Coating: **Thermo Manufacturing "SUPER PREP" Premium Grade Elastomeric Roof Coating.**
16	4.	7	SEBS Modified Asphalt Roofing Sheet Surfaced Mineral Granules: **Thermo Manufacturing "Thermoflex 7202" SBS Glass Fiber Mineral Surface Cap Sheet.**
16	6.b.	8	Elastomeric White Flashing Compound: **Thermo Manufacturing "T-60" Acrylic Latex Flashing Compound.**
17	6.c	9	Polyester Cold Process Roofing Fabric: **"Thermopolyester SB-100" Polyester Ply Reinforcement produced by Thermo Manufacturing.**

2. Owner shall remove evaporative coolers and duct work and fabricate a new equipment platform cover. Contractor shall adjust platform to the required height if necessary.

3. **Bid Opening date and time are to remain the same.**

Name and Title of Procurement Manager	Name and Title of Contractor (Type or Print)
for Corry Slama Procurement Manager	
Tom Torgerson 10/7/04 As Procurement Manager and not personally Date	Original Signature of the person signing the Offer Date

END OF ADDENDUM

STATE OF ARIZONA
DEPARTMENT OF EMERGENCY AND MILITARY AFFAIRS
5636 E. McDOWELL ROAD, BUILDING #M5330
PHOENIX, ARIZONA 85008-3495

REQUEST FOR QUOTATION NUMBER: Q5-0001

QUOTATION DUE DATE: 3:00 PM (MST), 13 OCT. 2004

BUYER: Tom Torgerson
TELEPHONE: (602) 267-2511 FAX:(602) 267-2576
DATED: 28 SEPT. 2004

QUOTATION FORM - THIS IS NOT A PURCHASE ORDER

The terms and conditions referenced in this solicitation should be reviewed and understood before preparing a quotation. The quotation shall be the best net price, including both delivery charges and applicable taxes. Delivery schedule shall be indicated in the spaces below. Quotes are due by the above date and time. **A FAXED QUOTE IS ACCEPTABLE!! OUR FAX TELEPHONE NUMBER IS (602) 267-2576.** However, a hard copy of your quotation shall immediately be mailed to the Buyer's attention.

PROJECT LOCATION: Coolidge Barracks, 1150 N. 4th Street, Bldg. # L3161, Coolidge, Arizona 85228

SCOPE OF WORK: Furnish all labor, supplies, applicable taxes, transportation and installation services required to:
Remove all existing roofing and re-install new roof at Coolidge Barracks, Coolidge, Arizona.

TOTAL SUM : $_____

Square Foot Price (Replace Flawed decking) $_____

(SEE ATTACHED SCOPE OF WORK)

Site Visit: A site visit has been scheduled at Bldg. L3161, 1150 N. 4th St., Coolidge, Az. at **9 AM on October 5, 2004.** All potential offerors are highly encouraged to attend.

The Offeror agrees to complete all work under this Solicitation within 30 calendar days from date of Purchase Order or Notice to Proceed.

COMPANY NAME: _____

ADDRESS: _____
Street City State and Zip

TELEPHONE: _____ FAX NUMBER: _____

_____ _____ _____
Signature Date Typed Name and Title

Arizona Transaction (Sales) Privilege Tax Federal Employer Identification Number: _____

License No. _____

Contractors Arizona License Number: _____

IT IS REQUESTED THAT ALL PROSPECTIVE BIDDERS CHECK THE APPROPRIATE SELECTION.

PLEASE CHECK THE APPROPRIATE SELECTION BELOW THAT APPLIES TO YOUR COMPANY

☐ 0. Non-Small/Non Minority/Non-Disabled ☐ 1. Small Business ☐ 2. Minority Owned Business ☐ 3. Women Owned Business ☐ 4. Owned by Disabled Individual ☐ 5. Small Business/ Minority Owned ☐ 6. Small Business/Women Owned ☐ 7. Small Business/Disabled Owner ☐ 8. Minority-Women Owned Business ☐ 9. Disabled-Minority Owned Business ☐ 10. Disabled-Women Owned Business ☐ 11. Small Business/Minority Owned ☐12. Small Business / Disabled Minority Owned ☐ 13. Small Business/Disabled Minority -Women Owned

_____
Company Name

_____ _____
Signature Date

INSTRUCTIONS TO OFFERORS

1. **Submission.** Quotations shall be signed where applicable and received in the Department of Emergency and Military Affairs Procurement Office (State) by the date and time indicated. Erasures, interlineation or other modifications in the Quotation shall be initiated by the person signing the Quotation.

2. **Quotation Waiver and Rejection.** Notwithstanding any other provision of this Request for Quotation, the Department expressly reserves the right to:

   a. Waive any immaterial defect or informality; or

   b. Reject any or all quotations, or portions thereof, or

   c. Reissue a Request for Quotation.

3. **Americans With Disabilities Act.** People with disabilities may request special accommodations such as interpreters, alternative formats, or assistance with physical accessibility. Requests for special accommodations must be made with seventy-two (72) hours prior notice. If you require accommodations, please contact the Buyer, as stated on the front page of this package.

4. **Incorporation by Reference.** The following documents shall apply to all work under this solicitation and are hereby incorporated by reference with the same force and effect as if they were given in full text. A copy of these documents are on file and available for review in the Procurement Office (State), Building #M5330, Department of Emergency and Military Affairs.

   a. Uniform Instructions to Offerors;

   b. Uniform General Terms and Conditions.

5. **Offer Acceptance Period:** Any Vendor submitting an offer under this Solicitation shall hold its offer open for a period of ninety (90) days after the date of the solicitation due date.

6. **Contractor License.** Each Offeror must be properly licensed to perform all work covered by this solicitation in accordance with the laws of the State of Arizona. Verification by the State Registrar of Contractors may be required by the Owner prior to contract award.

7. **Prior Approvals.**

   a. Substitution of materials, products, or equipment for those items specified (including changes of manufacturer, trade name, model, catalogue number, patented article, etc.), will be considered only when a written request has been submitted to Mr.Lon House prior to the quotation due date. Substitutions may be requested by Bidder, Subcontractor, Manufacturer, or other qualified party who wishes to propose use of a particular material, product, or equipment in lieu of that specified. Requests for prior approvals shall be submitted on the "Prior Approval Request Form, Page 1 and 2, included in this Solicitation (complete one (1) form per substitution).

   b. Approved requests will be set forth in Addendum. Late submittal of requests for prior approval may be cause for delay in the solicitation due date.

   c. Substitutions after Contract award will not be considered except when the originally approved materials or equipment is not available.

8. **Insurance Requirements.** Successful Offeror will be required to provide evidence of insurance by submitting an Insurance Certificate, in the amounts so stipulated, prior to award of Contract.

9. **Point of Contact: Questions on Scope of Work/** or to make **arrangements to visit site** should be directed to **Mr. Lon House,** telephone: **(602) 267-2991.**

SCOPE OF WORK

State of Arizona
Department of Emergency and Military Affairs
Facilities Management Office

PROJECT

Reroof Coolidge Barracks

LOCATION

1150 North 4th Street
Coolidge, Arizona 85228 - 0367

Date

September 15, 2004

FMO File Number
04A60-04-5151

PROJECT DIRECTORY

Owner:	Arizona Department of Emergency and Military Affairs 5636 E. McDowell Road Phoenix, Arizona 85008-3495
Director Facilities Management Office:	COL Debra A. Spear Facilities Management Office Building M5330 (602) 267-2771
Deputy Director Facilities Management Office	Mr. Robert Stockman Facilities Management Office Building M5330 (602) 267-2830
Engineering Services Supervisor	CPT Tom Wells Facilities Management Office Building M5330 (602) 267-2690
Point of Contact:	Mr. Lon House Facilities Management Office Building M5330 (602) 267-2991
On Site Contact	Mr. Lon House Facilities Management Office Building M5330 (602) 267-2991
Purchasing Officer:	Tom Torgerson DEMA Purchasing & Contracting Building M5350 (602) 267-2511

TABLE OF CONTENTS

DIVISION 1 GENERAL REQUIREMENTS

SECTION 01010 SUMMARY OF WORK

1.1 Scope:

A. Construct the work as specified under a lump sum contract.
Work to be performed on the Coolidge Barracks consists of:

1. Removing all existing roofing materials including composition base flashing; performing related construction; mechanically fastening a layer of styrene-butadiene-styrene (SBS) modified asphalt coated fiberglass base sheet to wood roof deck; applying one layer of polyisocyanurate / perlite composite rigid roof insulation boards to installed base sheet in hot asphalt; then applying a hot bituminous built-up roof system consisting of three plies of polyester felt in hot asphalt, installing a styrene-ethylene-butadiene-styrene (SEBS) modified clay stabilized asphalt emulsion sealer, then applying an elastomeric acrylic roof coating finish; also, installing new base flashings and sheet metal.
2. Additional and related construction consists of, but is not limited to:
   a. Disconnect and extract blower fan as well as evaporative coolers, including exterior ductwork and iron stand, and store where directed by Owner on premises.
   b. Close wood deck opening where blower fan duct was removed.
   c. Remove evaporative cooler wood platform and construct new wood curb or platform for downdraft AC unit to be furnished and installed by Owner. Owner will provide technical data information describing AC unit's dimensions.
3. Completed roof systems shall be classified by Underwriters Laboratories (UL) as Class A.
4. Perform all work as specified herein and/or shown or noted on drawings.

1.2 Scheduling:

A. A preconstruction meeting shall be coordinated between the Owner and the Contractor at the time of the Award of Contract

B. Perform work to accommodate Owner's occupancy requirements during the construction period, coordinate construction schedule and operations with Owner and other Contractors on the site.

1. The Contractor shall prepare and submit for the Owner's information an estimated progress schedule.
2. The progress schedule shall be related to the entire project to the extent required by the Contract Documents.
3. The progress schedule shall be submitted to the Owner not later than three (3) days prior to start of construction.

1.3 Inspections:

A. All work will be inspected by Point of Contact (POC) and Owner's construction inspector during progress and upon completion of work.

1. The POC shall be given three (3) day's notice before work begins.
2. Final payment will not be approved until the POC certifies that work was accomplished in accordance with this Scope of Work.

1.4 Safety Standards:

A. See Paragraph 8 of the Arizona Department of Emergency and Military Affairs Special Terms and Conditions Construction Contract.

1.5 Traffic Control:

A. The Contractor shall be responsible for the control of all traffic in the work area and for the placement of traffic barriers as needed.

1.6 Refuse Disposal:

A. Provide off-site disposal of all waste products, trash, debris, etc. Owner's trash receptacles will not be used by the Contractor.

SECTION 01080 APPLICABLE CODES

1.1 The Contractor shall obtain and comply with all local permits and regional and state regulations.

SECTION 01340 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

1.1 Summary:

A. Make submittals required by the Scope of work, and revise and resubmit as necessary to establish compliance with the specified requirements, all as described in this section.

1.2 Submittals:

A. Make submittals of shop drawings, samples, substitution requests, and other items in accordance with the provisions of this section.

1.3 Quality Assurance:

A. Coordination of Submittals:
1. Prior to each submittal, carefully review and coordinate all aspects of each item being submitted.
2. Verify that each item and the submittal for it conform in all respect with the specified requirements.
3. By affixing the Contractor's signature to each submittal, verify that this coordination has been performed.

1.4 Shop Drawings:

A. Scale and Measurements:
Make Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work.

B. Types of Prints Required:
Submit Shop Drawings in the form of one sepia transparency of each sheet plus three blueline or blackline prints of each sheet. Blueprints will not be acceptable.

C. Review comments of the POC will be shown on the sepia transparency when it is returned to the Contractor. The Contractor may make and distribute such copies as are required for his purposes.

1.5 Manufacturers' Literature:

A. Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly show which portion of the contents is being submitted for review.

B. Submit the number of copies, which are required to be returned, plus

one copy that will be retained by the Owner.

1.6 Samples:

A Provide Sample or Samples identical to the precise article proposed to be provided. Identify as described under "Identification of Submittals" below.

B. Number of Samples Required:
1. Unless otherwise specified, submit Samples in the quantity that is required to be returned, plus one that will be retained by the Owner.
2. By prearrangement in specific cases, a single Sample may be submitted for review and, when approved, be installed in the Work at a location agreed upon by the Owner.

1.7 Colors and Patterns:

A. Unless the precise color and pattern is specifically called out in the Drawings or this Scope, and whenever a choice of color or pattern is available in the specified products, submit accurate color and pattern charts to the POC for selection.

1.8 Identification of Submittals:

A. Consecutive Number All Submittals:
1. When material is resubmitted for any reason, transmit under a new letter or transmittal and with a new transmittal number.
2. On resubmittals, cite the original submittal number for reference.

B. Accompany each submittal with a letter of transmittal showing all information required for identification and checking.

C. On at least the first page of each submittal, and elsewhere as required for positive identification, show the submittal number in which the item was included.

D. Submittal Log:
1. Maintain an accurate submittal log for the duration of the Work, showing current status of all submittals at all times.

1.9 Timing of Submittals:

A. Make submittals far enough in advance of scheduled dates for installation to provide time required for review, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.

B. In scheduling, allow at least five working days for review by the POC following the POC's receipt of the submittal.

1.10 Required Submittals:

A. Submittals required by the Scope of Work includes, but are not necessarily limited to:

Section Number	Submittal Item
01600	Product listing
01700	Contract closeout items
07210	Roof Insulation
07510	Built-Up Bituminous Roofing

07900 Sealant

SECTION 01510 TEMPORARY UTILITIES

1.1 Temporary electricity, water and sanitary facilities are available on jobsite.

1.2 Coordinate with Owner, the use of the building telephone and restrooms.

1.3 The Contractor shall supply adequate cool pure drinking water for the use of employees on the project. National Guard facilities may not be available.

SECTION 01530 BARRIERS

1.1 Provide and maintain all fences, barricades, lights and other protective structures or devices necessary for the safety of workmen, equipment, the public and property as required by Federal, State, County or Municipal laws and regulations, local ordinances, laws and other requirements of authorities having jurisdiction with regard to safety precautions, operations and fire hazards.

SECTION 01600 MATERIALS AND EQUIPMENT

1.1 Summary:

A. Materials or equipment shall be delivered to the project in the manufacturer's original sealed, labeled containers, and shall be adequately protected against moisture, dust, tampering or damage from improper handling or storage. Materials shall not be delivered to the site before they are needed.

B. Storage of materials and construction equipment shall be coordinated with the Owner. Access to adjacent buildings shall be maintained free and clear at all times. Careful planning and scheduling of deliveries is mandatory. The Contractor shall assume full responsibility for properly storing and protecting materials and equipment.

1.2 Substitutions:

A. Refer to the Instructions to Bidders for information regarding the approval of substitutions of materials or equipment prior to bidding.

B. After award of contract the Owner will consider a formal request for the substitution of products in place of those specified, when either the specified material is not available or a superior product has become available. The format for the request for substitution will be furnished to the Contractor by the POC.

1.3. Environmental Awareness:

A. Reference 40 CFR 261.20 through 261.24.

B. The Contractor shall diligently attempt to use products that are environmentally "friendly."

C. If the Contractor is unable to provide environmentally "friendly" products, he shall submit to the Owner at the start of Work, a list of those products considered "unfriendly" along with their Material Safety Data Sheets (MSDS's).

D. Characteristics of environmental "unfriendly" products consist of, but are not necessarily limited to, the following:
1. Ignitability - flashpoint of less than 140°F (60°C).
2. Corrosivity - pH less than or equal to 2, or greater than or equal to 12.5.
3. Reactivity - reacts violently with water or generates toxic gases, vapors, or fumes when mixed with water.
4. Toxicity - any product that may create waste in quantities exceeding those in Table 1 of 40 CFR 261.24.
5. Toxic Release Inventory (TRI) - any product that appears on this list prepared by EPA.

1.4 Asbestos:

A. Materials containing asbestos are prohibited on this project. Use only asbestos-free products.

SECTION 01700 CONTRACT CLOSEOUTS

1.1 Summary:

A. This Section describes an orderly and efficient transfer of the completed Work to the Owner.

B. Related Work:
1. Documents affecting work of this Section includes but is not necessarily limited to, General Conditions and Division 1 of this Scope of Work.
2. Activities relative to Substantial Completion and Contract closeout are described in the General Conditions.

1.2 Quality Assurance:

A. Prior to requesting inspection by the POC, use adequate means to assure that the Work is completed in accordance with the specified requirements and is ready for the requested inspection.

1.3 Cleaning:

A. Besides general broom cleaning, do the following special cleaning at completion of work:
1. Remove marks, stains, fingerprints, other soil, paint, asphalt, dirt, etc.
2. Clean fixtures and equipment by removing stains, paint, asphalt, dust, dirt and etc.
3. Remove temporary protections.

1.4 Warranty/Guarantee:

A. Contractor:
1. The Contractor shall, and hereby does, warrant and guarantee that all work performed on this project will be free from defects of materials and workmanship for a period of **two (2) years** from the date of Owner acceptance of the project. A **two (2) year weather tightness guarantee** shall be required from the Contractor.
2. Contractor agrees that he will, at his own expense, repair and/or replace all such defective work that is found to be defective during the term of this warranty/guarantee.
   a. Should the Contactor fail to repair and/or replace such defective materials and/or workmanship within a period

agreed upon between the Owner and the Contractor, the Owner may perform, or have performed, the necessary work, and the Contractor hereby agrees to reimburse the Owner for actual cost.

b. The warranty/guarantee period on any part of the work so repaired and/or replaced shall be extended twelve months from the date of such repair and/or replacement.

3. This warranty/guarantee will not apply to normal wear and tear or damage by acts beyond the Contractor's control.
4. Contractor shall secure required warranty/guarantee in a comparable form as that contained in these documents, addressed to and in favor of the Owner.

B. Manufacturer:

1. Contractor shall furnish **manufacturers 20-year labor and material no dollar limit warranty** upon satisfactory completion of work.
2. Delivery of warranty/guarantee will not relieve the Contractor from any obligation assumed under other provisions of the Contract.

1.5 Procedures:

A. Substantial Completion:

1. Prepare and submit request as required in the Contractors responsibilities.
2. Within a reasonable time after receipt of the request, the POC will inspect to determine status of completion.
3. Should the POC determine that the Work is not substantially complete:
   a. The POC will notify the Contractor, in writing, giving reason therefore.
   b. Remedy the deficiencies and notify the POC when ready for reinspection.
4. When the POC concurs that the Work is substantially complete:
   a. The POC will prepare a "Certificate of Substantial Completion", accompanied by the Contractor's list of items to be completed or corrected, as verified by the POC.
   b. The POC will submit the Certificate to the Contractor for signature.

B. Final Inspection:

1. Notify the POC for final inspection.
2. Should the POC determine that the Work is incomplete or defective:
   a. The POC will notify the Contractor, in writing, listing the incomplete or defective work.
   b. Remedy the deficiencies promptly, and notify the POC when ready for reinspection.
3. When the POC determines that the Work is acceptable under the Scope of Work and Drawings, he will request the Contractor to make closeout submittals.

C. Closeout submittals include, but are not necessarily limited to:

1. Record documents showing:
   a. Any and all changes made to the Drawings and Scope annotated in red ink on a clean set of the Owner's documents;
   b. Contractor's signature and date of each sheet of Drawings;
2. Operation and maintenance data for items so listed in pertinent other Sections of this Scope of Work, and for other items so directed by the POC;
3. Warrantics and bonds;

4. Spare parts and materials extra stock;
5. Evidence of payment and release of liens;
6. Contractor's affidavit indicating compliance with all work required under the terms of the Contract.

1.6 Instructions:

A. Instruct the Owner's personnel in proper operation and maintenance of systems, equipment, and similar items, which were provided as part of the Work.

DIVISION 2 SITE WORK

SECTION 02050 DEMOLITION

PART 1.0 GENERAL

A. Contractor shall be responsible for the removal and care of all items to be reused as well as components of building, utilities and equipment. Provide a temporary waterproof cover over openings and secure against possible wind blow off. Precautions must be taken at all times to prevent damage to the interior and exterior of the building as well as to grounds.

B. Do not uncover more roof area than can be weather waterproofed prior to inclement weather. Complete the work in such manner that the project is at all times water weather-tight should there be any change to intemperate weather. Do not leave roof areas, flashings or ductwork open and provide temporary roofing and waterproofing in emergency for watertight construction in advance of unexpected harsh weather. Remove temporary roofing before proceeding with specified work.

C. Phase application is not allowed. Do not tear-off more roofing and insulation materials than can be covered with base sheet, new roof insulation and completed roof membrane, with fifteen (15) pounds per 100 square feet bitumen glaze coat, and sealed water weather-tight on the same day. Exposed insulation edges left at the end of day's work shall be temporarily sealed to adjoining existing roof membrane area (scraped cleaned and primed with asphalt primer) by lapping new roof membrane over the unprotected edge of the insulation, then bitumen mopping or asphalt roofing cementing it into place. Extract when work resumes.

PART 2.0 LABOR, TRANSPORTATION, EQUIPMENT, TOOLS & INCIDENTALS

2.1 Furnish all labor, transportation, equipment, tools, incidentals, and services necessary to perform demolition.

PART 3.0 EXECUTION

3.1 Precautions:

A. Care must be taken not to damage, ductwork, wood nailers, etc., which will be reused. Damage incurred during project operations shall be corrected, to Owner's satisfaction, by Contractor at his expense.

B. Carefully disconnect and remove blower fan as well as evaporative coolers, including exterior ductwork and iron stand, and store where directed by Owner on premises.

3.2 Demolition:

A. Tear-off all present roofing and insulation materials including base flashings, lead plumbing and other sheet metal jacks, metal edging, etc., down to surface of wood deck.

B. Remove evaporative cooler wood platform.

3.3 Decks and Walls:

A. Check uncovered decks and walls carefully for defects. Report to Owner's representative any problems encountered.

B. Clean Roof Areas:
Clean roof areas and remove from project all rubbish, dust, flakes, other debris, etc. and legally disposing of it off jobsite.

DIVISION 6 WOOD AND PLASTIC

SECTION 06100 ROUGH CARPENTRY

PART 1.0 GENERAL

1.1 Work consists of inspecting for defective and correcting any faulty wood decking and nailers. Close deck opening where blower fan duct was removed. Replacing flawed decking approved by Owner at a per lineal foot price (see PRICE SHEET FORM). Extending or lowering existing wood nailers to accommodate thickness of new rigid roof insulation.

1.2 Build appropriate new wood curb or platform for downdraft AC unit to be furnished and installed by Owner. NOTE: Owner will provide technical data information describing AC unit's dimensions. Wood curb or platform height to be a minimum of 12-inches above finished roof surface plane at lowest point. Wood curb or platform shall accommodate roof slope and to have a level top.

1.3 Keep carpentry materials dry during delivery. Store lumber and plywood in stacks. Protect bottom of stack against contact with damp or wet surfaces. Protect materials from weather.

1.4 Obtain measurements and verify dimensions before proceeding with carpentry work.

1.5 Layout, cut, fit, erect and secure with sufficient nails, screws, bolts, supports and brackets to insure tight rigidity. Construct appropriately formed to proper size, shape and dimensions with all angles and lines in true alignment, straight, sharp, erected plumb and level.

1.6 All sawing to be performed on ground to prevent contamination of new insulation and roofing with saw dust.

1.7 Use only sound, thoroughly seasoned, well manufactured materials of the longest practical length and sizes to minimize jointing.

1.8 Use materials free from warp that cannot be easily corrected by anchoring and attachment. Sort out and discard warped materials and materials with other defects, which would impair the quality of the work.

1.9 Set carpentry work accurately to and precisely cut and fit.

1.10 Do not wax or lubricate fasteners that depend on friction or holding power. Make tight connections between members. Install fasteners without splitting work, pre-drill if required.

PART 2.0 PRODUCTS

A. Decking:
Match existing sheathing.

B. Wood Nailers:
1. Number 2 Douglas Fir S4S 1x6.
2. C-C exterior APA ½-inch thick plywood with Panel Identification Index 24/0.

C. Wood Curb or Platforms:
1. Framing:
Number 2 Douglas Fir S4S 2x air-dried to maximum 19 percent moisture content.
2. Platform Sheathing:
3/4 inch CD Exterior plywood with Panel Index 42-20.

D. Carpentry Nails:
Galvanized steel common nails per FS FF-N-105B Type II Style 10.

E. Wood Platform or Curb Sheet Metal Straps:
10-gauge 5 inch long x 1 inch wide galvanized steel per ASTM A526 straps. Punch holes as required to accommodate nails.

PART 3.0 EXECUTION

A. Decking:
1. Close wood deck opening where blower fan duct was removed.
2. Replace flawed decking approved by Owner at a per lineal foot price (see PRICE SHEET FORM).

B. Wood Nailers:
Contractor is required to inspect present wood nailers and if any are found faulty, correct defective sections matching existing, or replace entirely, whichever is appropriate.
1. Install wood nailer strips attaching at eaves as a nailing base for roof fixtures. Wood nailers shall be the same thickness as the new roof insulation boards specified herein to be butted against them. Extend or lower wood nailers as necessary to achieve new roof insulation height if required.

C. Wood Curb or Platform:
1. Properly build wood curb or platform with opening for downdraft duct for AC unit. Construct as an appropriate base to support the unit.

D. Wood Curb or Platforms Sheet Metal Straps:
Secure four sides of curb or platform to wood roof deck with sheet metal straps nailed to frame and deck.

DIVISION 7 THERMAL AND MOISTURE PROTECTION

PART 1.0 GENERAL

1.1 Regulatory Requirements:

A. Follow local, state and federal regulations, safety standards and codes.

When a conflict exists, use the stricter document.

B. All applicable material handling and associated equipment shall conform to and be operated in conformance with Occupational Safety and Health Association (OSHA) safety requirements.

1.2 Installation Requirements:

A. Phase application is not allowed. Do not tear-off more rigid roof insulation and roofing materials than can be weather-water-proofed during the same day with new insulation, roof membrane and base flashings. Roof insulation and roofing membrane, including base flashings (except surfacing), with 15 pounds per 100 square feet asphalt glaze coat, shall be finished in one operation up to the line of termination at end of day's work. Exposed roof insulation edges left at the end of day's work shall be temporarily sealed to adjoining existing roof membrane area (scraped clean and primed with asphalt primer) by lapping new roof membrane over the unprotected edge of the insulation, then bitumen mopping or asphalt roof cementing it into place. Remove when work resumes.)

B. Bitumen shall be applied at the EVT temperature plus or minus 25 degrees Fahrenheit as printed on the asphalt cartons or bill of lading. Under no circumstance shall the bitumen be heated above the minimum flash point (FP) and finished blowing temperature (FBT).

C. Kettle temperature shall be determined by means of a thermometer dipped into a bucket of bitumen that has just been drawn from the kettle. Application temperature shall be determined by thermometer dipped into mop bucket, felt layer machine or mini mopper at point of application.

1. Provide a calibrated portable thermometer to measure the bitumen temperature at the kettle and at the point of application.

D. Protect landscaping, sidewalks and/or pavement and building walls adjacent to hoist and kettle prior to staring work.

E. Extreme care shall be exercised by the Contractor to prevent materials from getting on building walls, sidewalks or pavement. If necessary, Contractor shall protect adjacent surfaces with tarpaulins or other covering during application of materials.

1.3 Delivery, Storage and Handling Of Products:

A. All materials shall be delivered to the job site on pallets in manufacturer's original, unopened containers. Each container or roll shall bear the manufacturer's label as well as Underwriters Laboratories Incorporated (UL) Classification markings if applicable. Materials shall be delivered in sufficient quantity to allow the work to proceed without interruption.

B. Labels on, or shipping tickets for, asphalt shall bear certificates for full compliance with requirements of Table 1, ASTM D312, Equiviscous Temperature (EVT), Finished Blowing Temperature (FBT), and Flash Point (FP).

C. Store materials in a weather safeguarded environment, clear of ground and moisture, completely protected against water and sun. Stand roll materials on ends with the salvage edge up away from supporting surface.

1 Make sure materials are covered and well ventilated by the night of

delivery. Covering must be done with a tarpaulin or similar cover. Black or clear coverings are not acceptable. In addition, if applicable, split the protective shrink-wrap bag covering the rolls to provide ventilation. If possible store all materials in a shaded area. Stack palletized units one-high.

2. Wet or damaged products will be rejected and shall be replaced, without project delay, with new materials in good condition.

1.4 Environmental Requirements:

A. Apply materials in dry weather. Do not apply materials when expecting rain, dew, ice, etc.

B. Do not apply materials to frozen surfaces.

C. Temperature at time of application shall be minimum 45-degrees Fahrenheit (F) and rising.

D. Do not install bitumen unless proper asphalt application temperatures (EVT ±25°F) can be maintained. Do not modify asphalt by prolonged over-heating. Do not heat asphalt above flash point. Do not let the asphalt temperature to fall below 400-degrees Fahrenheit, or overheat the asphalt to overcome rapid cooling. It is essential that the asphalt be applied uniformly at a distance not to exceed 4 feet in front of the advancing roll surface.

E. Spraying of modified asphalt emulsion and elastomeric acrylic roof coating shall not be carried on when wind velocity is excessive.

F. Do not allow modified asphalt emulsion and elastomeric acrylic roof coating to freeze until installed and they have dried completely. Consider wind chill factor.

1.5 Project Conditions:

A. The roof deck shall be structurally sound to support the live and dead load requirements of the roof insulation as well as the roofing system and sufficiently rigid to support construction traffic.

B. Distribute materials temporarily stored on the roof to stay within the live load limits of the roof construction.

1.6 Coordination:
Coordinate and direct execution of related work Sections concurrently with roof insulation and roofing system application.

SECTION 07210 ROOF INSULATION

PART 1.0 GENERAL

1.1 Scope of Work:
Work to be performed under this section consist of furnishing all plant, labor, materials, equipment and services necessary to mechanically fasten a layer of styrene-butadiene-styrene (SBS) modified asphalt fiber glass base sheet, then overlaying base sheet with one layer of 3½-inch thick polyisocyanurate / perlite composite rigid roof insulation in hot bitumen, all as specified herein and/or indicated or noted the drawings.

A. Regulatory Requirements:
Rigid roof insulation shall have been tested and classified by

Underwriter Laboratories (UL) as Class A.

1.3 Quality Assurance:
Rigid roof insulation applicator shall be acceptable roofing system manufacturer's current "Certified Roofing Contractor".

PART 2.0 PRODUCTS

2.1 Acceptable Materials:

A. Products manufactured or accepted by roof system manufacturer.
Quantities Of Roof Insulation Materials Per 100 Square Feet Of Roof Area:
SBS Modified Asphalt Coated
Fiberglass Base Sheet (30.66 lbs min.)---------- 1 layer
Mechanical Fasteners (for SBS modified asphalt coated fiberglass base sheet securement to wood plank roof deck)---------- neg.
Bitumen (30 lb. asphalt solid mopping for attachment of 3½-inch thick polyisocyanurate / perlite composite rigid insulation to installed SBS modified asphalt coated fiberglass base sheet)---------- 1 mopping
Polyisocyanurate / Perlite Composite
Rigid Roof Insulation (3½-inch thick)---------- 1 layer

1. SBS Modified Asphalt Coated Fiberglass Base Sheet:
   SBS modified asphalt coated glass fiber core base sheet per ASTM D4601, listed UL Type G2, 30.66 lbs. minimum weight.
2. Mechanical Fasteners:
   Annular thread nails with 1-inch diameter caps.
3. Bitumen:
   Asphalt in compliance with ASTM D312 Type IV;
4. 3½-Inch Thick Polyisocyanurate / Perlite Composite Rigid Roof Insulation:
   a. 3½-inch, 48-inch by 48-inch size, composite roof insulation board combining polyisocyanurate foam with perlite rigid insulation and fiber glass facer in compliance with ASTM C1289, Type III, UL 790 Class A.
   b. 3½-inch thick polyisocyanurate/perlite composite rigid roof insulation shall provide a thermal resistance "R" factor of 19.90.

PART 3.0 EXECUTION

3.1 Preparation:
Remove trash, debris, grease, oil, water, moisture and contaminates.

3.2 Examination:
Verify wood deck to receive roof insulation is properly inclined to achieve drainage, dry, smooth, clean, free of depressions, waves or projections, and fastened securely to roof framing. Roof insulation shall not be installed until all unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions by Contractor.

3.3 Roof Insulation Application:
Neatly fit all joints and miter as necessary to prevent open joints and irregular surface. Cut insulation boards as required to fit wood nailers and vertical surfaces. Butt insulation units moderately together as well

as to wood nailers and vertical surfaces.

A. SBS Modified Asphalt Fiberglass Reinforced Base Sheet:
Install one layer of base sheet lapping each 2-inches on sides and 4-inches on ends with end laps offset not less than 36-inches from adjacent base sheet end laps. Fasten through the laps every 9-inches and two rows down the center of each sheet, spaced 12-inches from side edges, with fasteners staggered on 18-inch centers.
1. Envelope Extensions:
Edges of the base sheet layer shall extend over wood nailers by 18-inches and be turned up on, but not attached to, vertical surfaces to a height of 18-inches.

B. Polyisocyanurate / Perlite Rigid Roof Insulation Application:
Install one layer of 3½-inch thick, 48 inch by 48-inch size, polyisocyanurate / perlite composite rigid roof insulation boards with long joints continuous and short joints staggered a minimum of 6-inches. Mop the full with under each board with asphalt at the rate of 30 lbs per 100 square feet. Promptly walk every piece of insulation in and allow asphalt to solidify obtaining a complete bond. Maximum elevation variation between boards at joint shall be 1/8-inch.

C. Close Envelopes:
Fold 18-inch extensions over installed insulation edges and secure into place with 30-pounds per 100 square feet solid mopping of hot asphalt.

SECTION 07510 BUILT-UP BITUMINOUS ROOFING

PART 1.0 GENERAL

1.1 Scope:
Work to be executed under this section consist of furnishing all plant, labor, materials, equipment and services necessary to apply a hot bituminous built-up roof system consisting of three plies of polyester felt in hot asphalt over installed perlite rigid roof insulation, applying a styrene-ethylene-butadiene-styrene (SEBS) modified clay stabilized asphalt emulsion sealer, then installing an elastomeric acrylic roof coating finish, as well as installing new composition base flashings and sheet metal.

A. Regulatory Requirements:
Polyester hot bituminous built-up roof system with SEBS modified asphalt emulsion sealer and elastomeric acrylic roof coating finish shall conforming to UL Class A Fire Hazard Classification, as attested by being listed in the current UL Building Materials Directory.

B. Quality Assurance:
Roofing applicator shall be acceptable roofing system manufacturer's current "Approved Roofing Contractor".

PART 2.0 PRODUCTS

2.1 Acceptable Materials:
Products manufactured or accepted by roof system manufacturer.

A. Quantities Of Materials And Approximate Wet Weight Per 100 Square Feet Of Roof Area:
Asphalt Primer (to prime masonry surfaces receiving cant strips ---------- neg.
Bitumen (asphalt mopping for fixing perlite cant strips

to installed roof insulation envelopes at vertical Surfaces) -------- neg.
Perlite Cant Strips (one layer) ---------- neg.
Bitumen (three solid moppings to installed roof insulation surfaces and between polyester felt membrane layers) 25 pounds each ---------- 75.00 lbs.
Polyester Felt (three layers) ---------- 9.60 lbs.
SEBS Modified Clay Stabilized Asphalt Emulsion (flood coat over roof membrane) 3 gallons ---------- 14.96 lbs.
Elastomeric Acrylic Roof Coating (finish – base coat color to be gray, final coat white) 3 gallons ---------- 34.50 lbs.

1. Asphalt Primer:
   Solvent type, asphalt base primer per ASTM D41.
2. Bitumen
   Asphalt in compliance with ASTM D312 Type IV.
3. Perlite Cant Strips:
   Perlite per ASTM C728 fabricated into rigid cant strips, 4 feet long, 4 inches wide, with 45-degree face and 90 degree back configuration.
4. Polyester Felt
   Spunbonded polyester felt for use in hot asphalt built-up roofing. Polyester felt to be approved by Underwriters Laboratories as UL 790 Class A and UL Subject 1897 (classification for wind uplift) and to have the following physical properties:

Property	**ASTM**	**Value**
Weight, nom	D3776	185 gr/sq mtr
Tensile Strength	D1117	
MD		65 lbs/in
XD		50 lbs/in
Elongation	D4830	
MD		36%
XD		52%
Trapezoidal Tear Strength, min	D4830	
MD		34 lbf
XD		40 lbf
Shrinkage %		
MD		-0.50
Thickness, range	D1117	38 mils

5. SEBS Modified Clay Stabilized Asphalt Emulsion
   A single component, clay stabilized asphalt emulsion base, modified with SEBS rubber to yield a permanently elastomeric waterproofing compound. UL 790 Class A and Class B. All containers to be supplied with UL Classification labels. SEBS modified clay asphalt emulsion to have the following minimum physical properties:

Property	**ASTM**	**Values**
Weight Per Gallon	D1475	9.2 lbs.
Solids Content, min	D2697	50-55%
Flash Point, min	D93	>150°F
Tensile Strength (Unreinforced), nom	D412	
@ 0°F		650 psi
@ 73°F		300 psi
Elongation (Unreinforced), 0/0 min	D412	

@ 0°F		400%
@ 73°F		750%
Permanent Set At Break (Unreinforced), max	D412	
@ 0°F		12%
@ 73°F		16%
Peel Adhesion (3 ply membrane), min	D413	15 pli
Water Vapor Transmission (permeability)	E96	0.021

6. Elastomeric Acrylic Roof Coating:
Elastomeric acrylic roof coating shall be a single component 100% acrylic based reflective roof coating. The coating shall have been tested and classified by Underwriters Laboratories as Class A and Class B per UL 790 and UL 1256. Coating to meet or exceed ASTM D6083. All containers shall be supplied with UL Classification labels. The elastomeric acrylic roof coating base coat is to be gray, finish coat to be white and to have the following physical properties:

Property	Test Method	Value
Weight Per Gallon	ASTM D1475	11-12 lbs
Solids Content, min	ASTM D1353	68%
Flash Point, min	ASTM D93	>302°F
Tensile Strength, max	ASTM D2370	
@ 73°F		205 psi
@ 0°F		478 psi
Elongation, 0/0	ASTM D2370	
@ 73°F		282%
@ 0°F		104%
Wet Adhesion	ASTM C794/D903	7.3 pli
Tear Resistance	ASTM D624	73 lbf/in
Dry Peel Adhesion on foam, steel, plywood	ASTM D413	>12
Low Temperature Flexibility After 1000 hrs of Xenon Arc	ASTM C522	Pass (-26°C)
Permeance	ASTM D1653	0.1993 perms
Ultraviolet Exposure 1000 hrs Xenon Arc	ASTM D4798	No cracking, checking, loss of flexibility
Water Swelling, mass	ASTM D471	3.43%
Fungus Resistance	ASTM G21	Zero Growth
Reflectivity	FTS #141a	90%
Weather-o-meter Type BH, Xenon Arc, 8000 hrs	ASTM D26	No deterioration

a. Coverage:
When applied at a rate of 1 gallon per 100 square feet, the theoretical dry film thickness should be 9 mils (244 microns).

B. Summary of Base Flashing Materials (Incorporating Three Course Flashings):
Quantities Of Materials and Approximate wet Weights Per 100 Square Feet Of Area:
Asphalt Primer (one gallon) ---------- 8.00 lbs.
Bitumen (two solid moppings to vertical surface and between polyester hot felt layers) ---------- 50.00 lbs.
Polyester Hot Felt (two layers) ----------

6.40 lbs.
SBS Modified Asphalt Roofing Sheet
Surfaced With Mineral Granules ----------
1 ply
Elastomeric Acrylic Roof Coating (finish – base coat
color to be gray, final coat white) 3 gallons ----------
34.50 lbs.

1. Asphalt Primer:
   Solvent type, asphalt base primer per ASTM D41 as previously specified.
2. Bitumen:
   Asphalt in compliance with ASTM D312 Type IV as previously specified.
3. Polyester Hot Felt:
   Spunbonded polyester felt for use in hot asphalt built-up roofing as previously specified.
4. SBS Modified Asphalt Roofing Sheet Surfaced with Mineral Granules:
   Strong, non-woven glass mat that is saturated and coated with Styrene-Butadiene-Styrene (SBS) modified asphalt and surfaced with white mineral granules. ASTM D5147. To be UL rated with the following physical properties:

Property	**Value**
Weight per roll	90 lb.
Tensile Strength (MD/XD)	75 lbf/in
Softening Point	250°F
Thickness, min	3.5 mm
Elongation @ Break (MD/XD)	3% max.

5. Elastomeric Acrylic Roof Coating:
   Acrylic coating shall be a single component 100% acrylic rubber emulsion type roof coating, specifically formulated as a reflective, ultra violet and moisture resistant surfacing for elastomeric modified bitumen membranes as previously specified. The elastomeric acrylic roof coating base coat is to be gray and finish coat to be white.
6. Summary of Three Course Flashing Materials:
   Quantities Of Materials Per 100 Lineal Feet:
   Flashing Nails (on 6 inch centers) ----------
   200 nails
   Elastomeric White Flashing Compound (two layers -
   one under and one over cold process polyester fabric) --------- 5
   gals.
   Polyester Cold Process Roofing Fabric (one layer) ---------- 100
   l. f.
   a. Flashing Nails:
      1 inch long Case Hardened Nails with 1-inch diameter caps.
   b. Elastomeric White Flashing Compound:
      Water base, highly concentrated acrylic resinous plastic emulsion flashing compound with inert mineral pigments. Elastomeric white flashing compound to have the following minimum physical properties:

Property	**Value**
Weight per gallon	11 lbs
Total Solids	80%
Package Stability 30 days @ 50°C	Pass
Freeze-Thaw Stability after five cycles	Pass
Cure Through Time days	1 – 2

Tack-Free Time	30 minutes
Elongation 2 weeks @ 73°F and 50% relative humidity	650 – 850%

c. Polyester Cold Process Roofing Fabric:
Stitchbonded style polyester fabric for use as reinforcement in cold process roofing systems, 4 inch wide.

Property	**ASTM**	**Value**
Tensile (MD/XD) In.	D5035	29/6 lb.
Elongation, min	D5035	24/62%
Tear Strength	D5035 2500/2900	

D. Flashing Cement:
Flashing cement per ASTM D4586.

PART 3.0 EXECUTION

A. Preparation:
Remove trash, debris, grease, oil, water, moisture and contaminates.

B. Examination:
Verify surfaces to receive roof system are properly inclined to achieve drainage, dry, smooth, clean, free of depressions, waves or projections, that sheet metal and related items are available to properly install the roof system.

C. Application Requirements:
1. Do not walk on installed polyester felt surfaces when the bitumen is sticky. Do not allow bitumen to congeal before felts are embedded and fully impregnated. Polyester felts shall be applied without buckles, wrinkles, kinks, fishmouths or voids between it and the application of bitumen. Surface of every felt shall be broomed-in full width to obtain complete impregnation and to eliminate air pockets.
2. Roofing shall be applied so that the flow of water is over or parallel to, but never against, the laps. Snap chalk lines to insure a method to maintain a straight run of roofing so that kinks or fishmouths do not result, and the felts are completely flat.

D. Roof Membrane Application:
1. Perlite Cant Strips:
Prime masonry surfaces with asphalt primer at the rate of one (1) gallon per 100 square feet and allow to thoroughly dry. Embed entire length of cant strips into asphalt over envelopes covered installed perlite roof insulation against vertical surfaces entire length. Cant shall fit flush at ends and to vertical surfaces.
   a. Cant strips that can be readily lifted or displaced by hand are not adequately secured. Reinstall all lifted and displaced cant that is not damaged. Replace damaged items with new material.
2. Roof Membrane:
Beginning at the low point install a one-third (1/3) width polyester felt, then over that a two thirds (2/3) width polyester felt, then over both a full wide polyester hot felt. Following polyester felts are to be applied full width overlapping the preceding sheet, with 6-inch end laps not less than 36-inches diagonally staggered apart, in such manner that at least three (3) layers of polyester hot felt cover the perlite portion of roof insulation at any point. Broom each sheet as needed so that it shall be firmly and uniformly set without skips or voids into asphalt applied just before every felt at the rate of 25

pounds per 100 square feet, evenly over the entire surface. The polyester hot felt shall be firmly embedded and fully impregnated with asphalt. Tap and/or broom as necessary, before asphalt solidifies, to achieve full saturation and bond. Extend polyester fabric layers and asphalt moppings 2 inches above the top of cant strips onto vertical surfaces.

E. Base Flashings Application:

1. Mop entire flashing substrate and ply interfaces with asphalt to achieve a full and uniformly bonded laminate. Completely bond all flashings to the substrate and the flashing materials to each other without voids.
2. Base Flashings shall extent at least 8 inches minimum above finished roof surface plane.
3. Base flashing roll materials shall be applied in lengths not greater than 12 feet lapping 6 inches on ends with end laps staggered not less than 24 inches apart.
   a. Prime masonry surfaces to receive base flashings with asphalt primer at the rate of one gallon per 100 square feet and allow to dry thoroughly.
   b. Mop entire area to receive the base flashing with 25 pounds per 100 square feet of asphalt and install first layer of polyester felt extending from center of top of parapet wall, or top of curb or platform, onto the roofing membrane at least 2-inches beyond toe of cant strips. Completely mop area to receive a second ply with asphalt at the rate of 25-pounds per 100 square feet and apply second layer of polyester felt even with top of previous felt layer continuing 2-inches further out over the membrane then the first felt layer. Solid mop surface of second felt layer, then mop a SBS modified asphalt roofing sheet surfaced with mineral granules back side with 25-pounds per 100 square feet of asphalt and apply covering previous polyester felt plies plus 2-inches beyond and across the roof membrane. Press all base flashing roll materials into place, as each is applied, to eliminate voids. Each individual ply at corners shall be overlapped and sealed solidly between laps with bitumen.
      1. Three Course Flashings:
         a. Nail all composition base flashings on 6-inch centers, 3/4 inch below top edge, with case hardened nails.
         b. Three course top edge of wall base flashings by troweling a 1/8-inch thick, 4-inch wide, layer of elastomeric white flashing compound (evenly distributed 2-inches on install base flashing top and 2-inches on wall) completely covering all nails. Embed one 4-inch wide polyester cold process roofing fabric, overlaying elastomeric white flashing compound. Brush polyester cold process roofing fabric into place. Apply a final 1/8-inch thick trowel coat of elastomeric white flashing compound, completely covering the polyester cold process roofing fabric.

F. Related Sheet Metal:
Install related sheet metal as specified under Section 07600 - Flashings and Sheet Metal.

G. Complete Roof System:

1. SEBS Modified Asphalt Emulsion:
   Sweep roof clean. Spray a uniform monolithic sealer coat of SEBS modified asphalt emulsion to all roof membrane and base flashing surfaces at the minimum rate of three (3) gallons per 100 square

feet and allow to completely dry.

2. Elastomeric Acrylic Roof Coating:
Surface to receive roof coating shall be clean, free of dust, dirt and foreign matter. Any oxidized areas shall be scrubbed with water and flushed clean. Stir acrylic roof coating thoroughly before and occasionally during application. Strain and install with spray equipment. Apply two uniform coats to all roof areas, base flashings, jacks and vents, using two (3) gallons minimum per 100 square feet (27 mils dry thickness) at the rate of one (1) gallon first coat and two (2) gallons finish coat. First coat to be gray, second coat to be white. Install the second coat right angle to the first. The finish coat may be applied as soon as the first coat is dry.

SECTION 07600 FLASHINGS AND SHEET METAL

PART 1.0 GENERAL

A. Sheet metal and flashings to be in compliance with acceptable roof system manufacturer's, Sheet Metal and Air Conditioning Contractor's National Association (SMACA), and the National Roofing Contractor's Association (NRCA) recommendations, or as specified herein, which ever is the most stringent.

B. Accurately form all sheet metal to the proper size, shape and dimensions specified with all angles and lines in true alignment, straight, sharp, plumb, level and in place without bulges or waves. Where intercepting each other they shall be coped to an accurate fit and securely soldered. Conform to the best standard practices known to the trade. Form, fabricate and erect to provide for expansion and contraction in completed work. Finish weather and watertight throughout.

C. All roof penetrations and base flashing top edges shall incorporate sheet metal.

PART 2.0 MATERIALS

2.1 Sheet Metal Soldering:
Prior to soldering completely clean material at joints. Solder slowly as to thoroughly heat seams and completely fill them with solder. Exposed soldering with finish surface to be made neatly full, flowing and smooth. Use rosin type solder flux conforming to FS 0506B. After soldering, wash all fluxed surfaces with soda solution.

1. In additional to normal and customary soldering, all hemmed sheet metal joints to be soldered.
   a. Lead and Galvanized Metal Solder:
      Use alloy grade 58 composed of 50% lead and 50% block tin per ASTM B-32.
   b. Copper Metal Solder:
      Use 50% silver solder.

2.2 Sheet Metal Roofing Jacks:

A. Lead Plumbing Jacks:

1. Flashing sleeve shall surround plumbing pipe snugly and terminate 1 inch above pipe apex, incorporating a 6-inch wide deck flange. Sleeve top shall be turned down a minimum of 1 inch into vent pipe.
   a. Construct jacks from 3 pound lead complying with ASTM B-29.

B. Galvanized and Copper Metal Roofing Jacks:
1. Jack sleeve to fit diameter of pipe or conduit snugly with sleeve height 4 inches minimum above finished roof surface plane, incorporating a 6 inch wide deck flange.
   a. Build jacks from 24-gauge galvanized steel per ASTM A-526.
   b. Construct jack from 16-ounce cold rolled copper per ASTM B370.

C. Downdraft Wood Platform Sheet Metal Cover With Duct:
If a wood platform is incorporated, construct cover with a center duct. Duct shall extend snugly from inside of existing ductwork encased in wood platform and be long enough to telescope into bottom of AC unit. Provide a 90-degree 6-inch turndown around perimeter edges, incorporating a ½-inch drip edge. Leave clearance for base flashing to extend up behind turndown. Solder corners as well as cover and duct juncture watertight.
1. Build cover with duct from 20-gauge galvanized steel per ASTM A526.

D. Downdraft Wood Curb Sheet Metal Counter-Flashing:
If a wood curb is utilized in lieu of wood platform, fabricate metal counter-flashing providing a 90-degree 6-inch turndown, incorporating a ½-inch drip edge.
1. Construct counter-flashing from 24-gauge galvanized steel per ASTM A526.

E. Metal Edging (Gravel Stop):
Standard formed gravel stop. Gravel stop to have a minimum 3-½ inch wide deck flange and face long enough to accommodate extended wood nailers with a ½ inch rise as well as a ¼ inch hemmed drip edge. Provide metal edging cleats.
1. Construct from 24-gauge galvanized steel per ASTM A526.
2. Metal Edging Nails:
   11-gauge annular tread roofing nail with 3/8-inch diameter head.

F. Gutters and Downspouts:
Reuse present gutters and downspouts replacing any defective or missing sections matching existing.

PART 3.0 EXECUTION

A. Sheet Metal Roofing Jacks:
1. Prime flashing deck flange on both sides with asphalt primer and allow to thoroughly dry.
2. Place flashing over, or solder around roof penetration, and embed entire deck flange into a solid 1/8" thick layer of flashing cement on top of installed roof membrane. Apply three (3) collars of polyester felts over the flange. First collar shall be set completely into a solid 1/8-inch thick bed of flashing cement, the second and third each into 25 pounds per 100 square feet of asphalt. The inside edge of every felt collar shall be tailored to fit snugly around the flashing sleeve. First collar shall extend 3-inches, second 6-inches, and third 9-inches beyond the outer edge of the flange. After collars have been installed, form a cant with flashing cement around sleeve base.
   a. Seal juncture between jack sleeve and pipe or conduit watertight with Sealant specified in SECTION 07900 SEALANT.
   b. Turn plumbing vent jack excess sleeve over vertex into pipe a minimum of 1-inch pressing to fit inside of pipe contour.

B. Ductwork:

Construct new ductwork or as required. Comply with latest ASHRAE Guide requirements. Make water weather airtight.

C. Downdraft Wood Platform Sheet Metal Cover With Duct:
Install sheet metal covers over wood platform and properly connect internal ductwork.

D. Wood Curb Sheet Metal Counter-Flashing:
If wood curb is used instead of wood platform, correctly install metal counter-flashing to curb perimeters.

E. Metal Edging (Gravel Stop):
1. Prime metal edging flange on both sides with asphalt primer at the rate of one gallon per 100 square feet and allow to dry completely.
2. Hook hem over cleat and set metal edging deck flange, on top of installed roofing membrane, into a solid 1/8-inch thick bed of flashing cement, equal in width to the flange. Lap end joints 4-inches minimum with flashing cement between layers of metal. The deck flange shall be nailed to the wood nailers on 3-inch intervals, stagger nails from approximately 1-inches in from roof perimeter to 1-inch from flange edge. At least two nails shall be driven through all end laps.
3. Mop the primed metal edging deck flange and joining roofing with asphalt at the rate of 25 pounds per 100 square feet and embed a layer of 6-inch wide polyester hot felt. Place felt in such manner as to cover deck flange edge by 3-inches and extending 3-inches onto roof membrane. Cover the felt and metal deck flange with a 12-inch, then a 18-inch wide strip of polyester hot felt, each set into asphalt at the rate of 25 pounds per 100 square feet.

SECTION 07900 SEALANT

PART 1.0 GENERAL

A. Locations:
Where field conditions dictate.

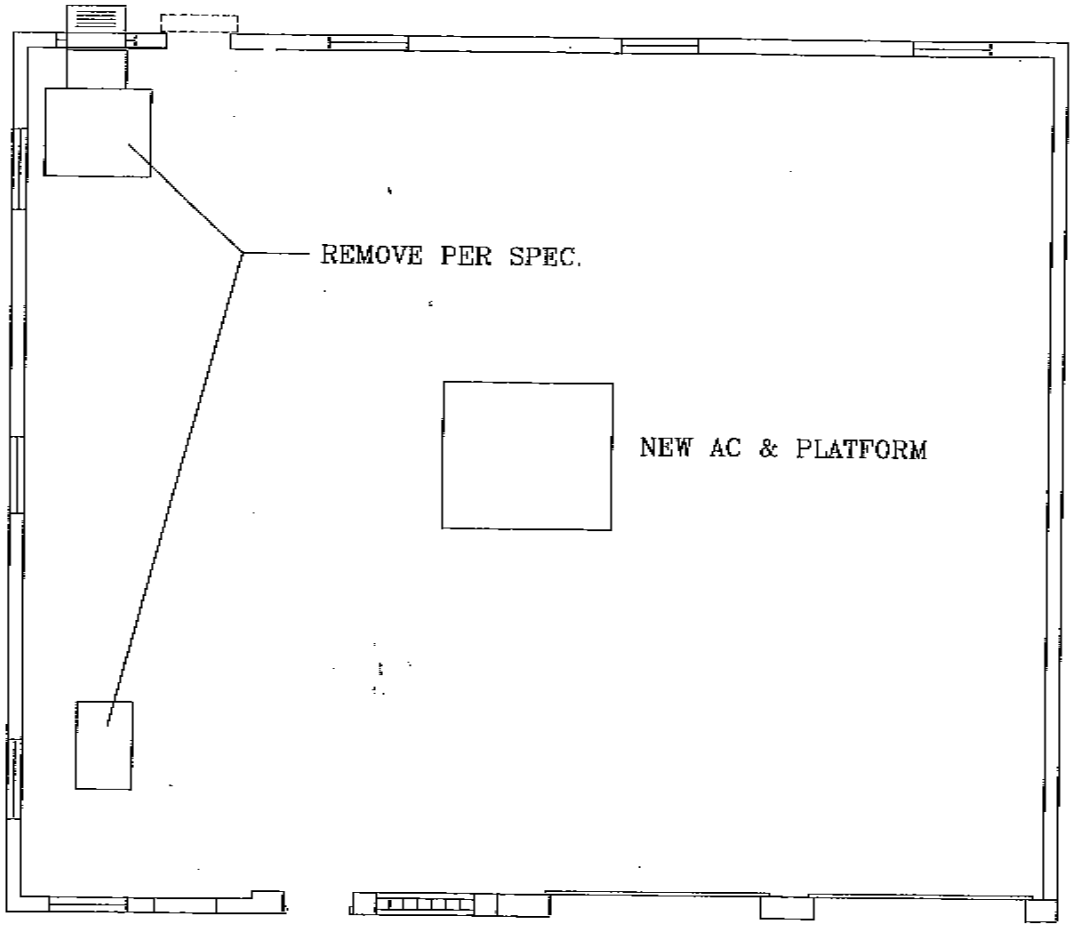
PART 2.0 PRODUCTS

A. Sealant:
Sonolastic SLI by Sonnborn, or equal approved by Owner. Sealant shall comply with Federal Specification TT-S-00230C.
1. Use sealant whose date of manufacturer shows they have not exceeded their shelf life. Do not use sealant with a date of manufacture more than 12 months old.

B. Sealant Backup Materials:
As manufactured or recommended by the sealant manufacturer for the substrate type and gape size. Backup material shall be sized to be slightly compressed when installed.

PART 3.0 EXECUTION

A. Application:
Follow manufacturer's instructions regarding surface preparation and application. Apply caulking under pressure, using gun with nozzle of proper size. Neatly point and tool Sealant surface. Clean adjacent surfaces and leave all finished work in neat, clean condition.



FAC#L3161

FOR CONSTRUCTION

ARIZONA ARMY NATIONAL GUARD

FLOOR PLAN

A-1

STATE OF ARIZONA
DEPARTMENT OF EMERGENCY AND MILITARY AFFAIRS
DEMA Procurement Office, Bldg #M5330
5636 East McDowell Road
Phoenix, Arizona 85008-3495

PRIOR APPROVAL REQUEST FORM

The Bidder, in compliance with INSTRUCTIONS TO BIDDERS, submits to the following to request approval to substitute materials and/or equipment as indicated below. Complete one form per substitution.

PROJECT: _____

SOLICITATION NO.: _____

SECTION	PAGE	PARAGRAPH/LINE	SPECIFIED ITEM

PROPOSED SUBSTITUTION: _____

Attached complete product description, drawings, photographs, performance and test data and other information necessary for evaluation. Identify specific model numbers, finishes, options, etc.

A. Will changes be required to building design (architecturally, structurally, mechanically or electrically) in order to properly install proposed substitution? Yes_____ No_____

If Yes, explain: _____

B. Will the undersigned pay for changes to building design, including engineering and drawing costs, caused by requested substitution? Yes_____ No_____

C. Does the proposed substitute comply in all respects with the specified project? Yes____ No____

If there are differences between proposed substitution and specified item, please list them below.

SPECIFIED ITEM	PROPOSED SUBSTITUTION

STATE OF ARIZONA
DEPARTMENT OF EMERGENCY AND MILITARY AFFAIRS
DEMA Procurement Office, Bldg #M5350
5636 East McDowell Road
Phoenix, Arizona 85008-3495

D. Does substitution affect drawing dimensions? Yes_____ No_____

If Yes, explain: _____

_____

E. What effect does substitution have on other trades?_____

F. Does manufacturer's warranty of proposed substitution differ from that specified? Yes_____ No_____

If Yes, explain: _____

_____

G. Will substitution affect the progress schedule? Yes_____ No_____

If Yes, explain: _____

_____

H. Will substitution require more license fees or royalties than specified product? Yes_____ No_____

If Yes, explain: _____

_____

I. Will maintenance and service parts be locally available for substitution? Yes_____ NO_____

If No, explain: _____

_____

Submitted by: _____

Signature: _____

Firm: _____

Address: _____

Telephone #: _____

Date: _____

For Procurement Officer Representative Use Only:

Accepted_____ Accepted as noted_____

Not Accepted_____ Received Late_____

By: _____

Date: _____

Remarks: _____